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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,710	08/16/2001	Yasufumi Uchida	OHG 125	1660

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EXAMINER

CRUZ, LOURDES C

ART UNIT PAPER NUMBER

2827

DATE MAILED: 08/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/930,710

Applicant(s)

UCHIDA ET AL.

Examiner

Lourdes C. Cruz

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 16-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 16-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Applicant's election without traverse of Claims 1-15 in Paper No. 6 is acknowledged.

Drawings

Figures 1A-1B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The figures showing a cross-sectional view of the invention are improperly crosshatched. All of the cross hatching patterns should be selected from those shown on page 600-81 of the MPEP based on the material of the part. Also see 35 CFR 184 (h)(3) and MPEP 608.02.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5,6,8-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the upper. This term lacks antecedent basis in the claim.

Claim 6 recites the term "region" a multiplicity of times. This makes the claim confusing because it is unclear whether the applicant is referring to the first introduced region, or if Applicant intends to introduce second regions in the claim. Also see that is unclear what "the region" refers to since "a region was introduced more than once in the claim.

Claim 8 recites "the upper surface of this substrate". This phrase lacks antecedent basis in the claim. Also, "the first element formation region", "the upper side", and "the straight line" lack antecedent basis.

Regarding claim 8, line 8, does applicant mean **the** posts?

Also regarding claim 8, see lines 8-10 wherein "first pads" is recited, see that first pads have already been defined and the re-introduction of the term makes the claim extremely confusing for it is not clear if this are the same pads previously introduced or not.

Additionally, regarding claim 8, see lines 15+ wherein "a region" is used a multiplicity of times. This is confusing for the same reasons provided above regarding repetition of terms.

Claim 10 recites "the upper surface of said insulating sheet". This lacks antecedent basis.

Claim 11 recites "in a region" more than once. It is unclear to the examiner whether Applicant is referring to the same or to different regions.

Claim 12 recites "the upper surface". This term lacks antecedent basis. Also, "the same number", and "the upper surface of said rearrangement posts" lack antecedent basis.

Also regarding claim 12, see that lines 21+ recite "stuck onto a region..." and proceed to recite "the region where the bonding pads". However, see that "the region" lacks antecedent basis for it does not refer to the same region previously introduced in the claim.

Regarding claim 15, see that the claim recites "conductive metallic wiring patterns" more than once. It is unclear if Applicant is referring to the same wiring patterns or introducing second ones.

Regarding all the claims above, and those dependent upon them, see that because of all the multiple 112 problems discussed above, the claims have been rendered confusing and indefinite. Therefore, they have been examined only as best understood by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4,6-8,10,12-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Mori (US 5903049).

Regarding claims 1-4, 6 and 7, Mori (See Fig 1) discloses:

A rearrangement sheet 9 comprising an insulating sheet 2a and conductive metallic patterns 3a formed on this insulating 2a sheet.

Additionally, Mori discloses:

- Said metallic patterns comprise electrodes for wire bonding with external electrodes (See portion not covered by 5)
- Said conductive metallic patterns are metallic wiring patterns
- Said conductive metallic patterns are conductive metal plated patterns
- Wherein an element mounting region is provided in a region on said insulating sheet other than where said conductive metallic patterns are formed, and an insulating adhesive sheet (see 5, between electrodes) is provided in the element mounting region (see that that the element is mounted on parts that are uncovered by metallic patterning)
- Said insulating sheet is adhesive

Mori also discloses:

A substrate 8; a first element 1b provided with a plurality of first bonding pads (underlying 4b) formed on the first upper surface of the substrate; a second element 1a

provided with a plurality of second bonding pads (underlying 4a) formed on the upper side of this first element (the upper side being the side where 4a is formed); a plurality of bonding posts 3b provided in a region of the upper surface of said substrate other than the first element formation region (See that 3b covers parts of 2b that the element does not); first wires 7 that connect the posts for first pad connection, of the bonding posts; wherein a rearrangement sheet 9 provided with an insulating sheet 2a and a plurality of conductive metallic patterns 3a that are formed on this insulating sheet is provided between first and second elements; said conductive metallic patterns are formed in a region, which is a region on said insulating sheet exposed from said second element, comprising a first position that can be reached by the straight line extending from a post for second pad connection, of said bond posts, without contacting said first bonding pads, and a second position, capable of wire bonding with the second bond pads (under 4a) for bonding post connection, of said second bonding pads;

These conductive metallic patterns and said post for second pad connection are connected by first relay wires (See 7 to the right of the Fig.); and said metallic patterns and second pads are connected by second relay wires (See 7).

- See that the conductive metallic patterns are formed on an upper surface of said insulating sheet
- See that a sealed portion 5 seals the upper surface of the semiconductor element and covers the rearrangement sheet
- Rearrangement posts of the same number as said bonding pads
- Wiring connection portions of the same number as the bonding pads

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5,9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori in view of Verma et al. (US 6407450).

See that Mori teaches all the structural limitations above. However Mori fails to specifically teach said conductive metallic patterns being constituted by an underlying plated pattern formed on the upper surface of the insulating sheet and a conductive metal plated pattern formed on this underlying plated pattern. See that Verma et al. (Fig. 5) teach multi-layered conductive metallic patterns formed in a substrate for the purpose of facilitating internal and external connection in order to provide a more compact device. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the teachings of Verma et al. to those of Mori in order to provide a more compact device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lourdes C. Cruz whose telephone number is 703-306-5691. The examiner can normally be reached on M-F 10:00- 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers


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for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Lourdes C. Cruz
Examiner
Art Unit 2827


Lourdes Cruz
August 10, 2002


Kleene
Primary Examiner